UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

Biosig Instruments, Inc. **Plaintiff,** **v.** **Nautilus, Inc.** **Defendant.**	**JURY TRIAL DEMANDED** **Case No. 10-cv-7722 (AKH)**

BIOSIG INSTRUMENTS, INC.'S REPLY TO DEFENDANT NAUTILUS, INC.'S COUNTERCLAIMS

Biosig Instruments, Inc.'s Reply to Nautilus, Inc.'s Introduction

1. Denied. Plaintiff, Biosig Instruments, Inc. ("Biosig") expressly denies Defendant, Nautilus, Inc.'s ("Nautilus") allegations. In the first Nautilus action, Nautilus informed this Court that Biosig's U.S. Patent No. 5,337,753 ("753 Patent") was invalid. Nautilus also informed the U.S. Patent and Trademark Office that Biosig's 753 Patent was invalid and instituted two reexaminations of Biosig's '753 Patent. But the U.S. Patent and Trademark Office agreed with Biosig and confirmed the patentability of all claims of the '753 Patent without amendment. Now, Biosig has reinstated its claim of patent infringement against Nautilus by bringing this suit against Nautilus for its past and continued infringement of Biosig's '753 Patent.

As Biosig's claims were not amended during the reexamination proceedings and Nautilus infringes upon the asserted '753 Patent claims, Nautilus now improperly reads limitations into the asserted patent claims in an attempt to avoid infringement. But the '753 Patent claims were not amended during reexamination and do not contain the language that

Nautilus seeks to read into the claims. Further, it is legally improper to read limitations into the patent claims. Moreover, Nautilus has rehashed its reexamination arguments here in its Answer and Counterclaim. Thus, Nautilus infringes upon Biosig's '753 Patent, and Biosig has brought this action to seek relief for Nautilus' years of infringement.

Perhaps because it has no real defense to its infringement, Nautilus has thrown the kitchen sink at Biosig in its Answer and Counterclaim, asserting ***sixteen*** so-called "affirmative defenses" to a patent infringement action and a series of meritless counterclaims. For example, Nautilus accuses Biosig of an antitrust violation and attempts to distract this Court from its infringement by accusing Biosig of all sorts of egregious behavior. But the facts will show that Nautilus infringes Biosig's '753 Patent and Biosig has not committed any of the nefarious acts set forth in Nautilus' pleading, such as inequitable conduct, false marking, and antitrust violations.

In addition, Nautilus has resorted to unfortunate conduct. For instance, Nautilus calls Biosig a "recidivist patent abuser and tortfeasor." The definition of recidivist is a person "who repeats same sort of criminal activities even after he is punished for such criminal activities previously." Biosig has not been convicted of any criminal activity and has not been charged with any crimes. Nautilus should withdraw its baseless assertions.

Biosig's Reply to Nautilus' First Counterclaim: Patent Noninfringement

1. Admitted in part, denied in part. In its complaint Biosig asserted claims 1 and 11 of the '753 Patent against Nautilus, and therefore Biosig admits that there is an actual controversy regarding infringement of those claims. As Biosig did not assert claims 2-10 and 12-16, Biosig denies that there is an actual controversy regarding the infringement of those claims, and denies that the Court has subject matter jurisdiction over the nonasserted claims.

2. Admitted.

3. Admitted.

4. Admitted that venue is proper, but denied that the Court has subject matter jurisdiction over the nonasserted claims.

5. Biosig admits that it owns the '753 Patent.

6. Admitted that Nautilus infringes claims 1 and 11 of the '753 Patent, but denied that Biosig has alleged infringement of the nonasserted claims in this case.

7. Admitted in part, denied in part. In its complaint Biosig asserted claims 1 and 11 of the '753 Patent against Nautilus, and therefore Biosig admits that there is an actual controversy regarding infringement of those claims. As Biosig did not assert claims 2-10 and 12-16, Biosig denies that there is an actual controversy regarding the infringement of those claims, and denies that the Court has subject matter jurisdiction over the nonasserted claims.

8. Denied.

9. Denied.

10. Denied.

11. Denied.

12. Denied.

A. Biosig admits that the '753 Patent claims require a "means for calculating" and that Nautilus' infringing equipment literally has the "means for calculating" set forth in the '753 Patent and that the prosecution history cited by Nautilus does not change that fact. Nautilus failed to describe what parts of Figure 4 of the '753 Patent are part of the claimed "means for calculating." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation.

13. Admitted.

14. Admitted.

15. Denied.

16. Nautilus has not provided Biosig with sufficient information to admit or deny the allegations of paragraph 16 because Nautilus has not defined what it means by a "4-beat average," therefore denied.

17. Denied.

18. Biosig admits that in an Office Action dated June 1, 1993, (Paper Number 4), Claims 1 and 11-13 of the patent application that eventually issued as the '753 patent-in-suit (application 07/895,936) were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,319,581 ("Cutter"). Biosig admits that in the June 1, 1993 Office Action that claims 14 and 15 were rejected under 35 U.S.C. § 103 as being unpatentable over Cutter in view of U.S. Patent No. 4,913,146 ("DeCote, Jr."). Biosig further admits that the June 1, 1993 Office Action stated that claims 2-10 and 16 would be allowable if rewritten to overcome a rejection under 35 U.S.C. § 112 and to include limitations of the base claim and any intervening claims. Applicants, further admit that in the June 1, 1993 Office Action claim 1 was rejected under 35 U.S.C. ¶ 112, second paragraph and according to the Office Action claim 1's preamble "appears to be inaccurate in that there is no structure in the claim that would accomplish heart monitoring, as is stated in claim 1." To the extent not admitted, denied.

19. Biosig admits that in the response filed September 15, 1993, (Paper No. 6 of the '753 patent file history), the patent applicant amended claim 1 as set forth in the response, and that Nautilus did not accurately quote the amendment to claim 1.

20. Biosig admits that in the September 15, 1993 response, the '753 Patent Applicant distinguished the Cutter patent as stated in the file history and argued that the claims were nonobvious over Cutter for the reasons stated in the file history including various independent reasons. One of those reasons was that Cutter failed to disclose a differential amplifier as claimed. To the extent not admitted, denied.

21. Biosig admits that in an Office Action dated December 28, 1993 (Paper No. 7 of the '753 file history), pending claims 1-16 were rejected "under 35 U.S.C. § 112, second paragraph as being indefinite for failing it particularly point out and distinctly claim the subject matter which applicant regards as the invention." Biosig also admits that the December 28, 1993 Office Action further stated that with respect to claim 1, "it is unclear how the output of the difference amplifier is the heart rate. There must be some structure connected to the amplifier, such as a counter, to determine from the output of the amplifier the heart rate."

22. Admitted.

23. Biosig admits that the '753 Patent Applicants filed a "Voluntary Amendment" on January 5, 1994 amending claim 1 as specified in Nautilus' answer.

24. Biosig admits that the January 5, 1994 "Voluntary Amendment" included the statements that Nautilus has quoted, but otherwise denied.

25. Biosig admits that the Examiner allowed the case in a Notice of Allowance dated January 19, 1994, but otherwise denied.

26. Biosig admits that claim 1 of the '753 Patent is an independent claim and includes the limitation of a "means for calculating the heart rate of said user using said measure [sic] time intervals" and that the '753 Patent has dependent claims 2-16, which depend at least in part from claim 1. Biosig further admits that some dependent claims may narrow the

meaning of the "means for calculating" set forth in claim 1 with respect to those claims. To the extent not admitted, denied.

27. Denied, and Biosig denies that there is prosecution history estoppel and expressly denies that there is any estoppel regarding the doctrine of equivalents in a manner that is relevant to this case.

28. It is not clear what meaning Nautilus attributes to "heart rate calculation algorithm based on a 2-beat average." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. But Biosig admits that Dr. Lekhtman and Biosig knew of certain heart rate calculation algorithms as of June 9, 1992.

29. It is not clear what meaning Nautilus attributes to "heart rate calculation algorithms that were not based on averaging the time between a given number of heartbeats." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. But Biosig admits that Dr. Lekhtman and Biosig knew of certain heart rate calculation algorithms as of June 9, 1992.

30. It is not clear what meaning Nautilus attributes to "heart rate calculation algorithms based on a 2-beat average." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. But Biosig admits that Dr. Lekhtman and Biosig knew of certain heart rate calculation algorithms as of June 9, 1992.

31. It is not clear what meaning Nautilus attributes to "heart rate calculation algorithms based on a 2-beat average." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation.

But Biosig admits that Dr. Lekhtman and Biosig knew of certain heart rate calculation algorithms as of June 9, 1992.

32. It is not clear what meaning Nautilus attributes to "heart rate calculation algorithms based on a 4-beat average." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. But Biosig admits that Dr. Lekhtman and Biosig knew of certain heart rate calculation algorithms as of June 9, 1992.

33. It is not clear what meaning Nautilus attributes to "heart rate calculation algorithms based on an 8-beat average." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. But Biosig admits that Dr. Lekhtman and Biosig knew of certain heart rate calculation algorithms as of June 9, 1992.

34. It is not clear what meaning Nautilus attributes to "heart rate calculation algorithms that were not based on averaging the time between a given number of heartbeats." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. But Biosig admits that Dr. Lekhtman and Biosig knew of certain heart rate calculation algorithms as of June 9, 1992.

35. Denied.

36. Denied.

37. Denied.

B. Biosig admits that the '753 Patent claims cover heart rate monitors having certain electrode configurations and circuitry including those in Nautilus' infringing equipment, and admits that the '753 claims does not cover other electrode configurations and circuitry

38. Admitted.

39. It is not clear what "prior art" Nautilus is referring to in its allegations. Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation.

40. Denied.

41. Denied.

42. It is not clear what meaning Nautilus means by a "heart rate monitor built according to the disclosure of U.S. Patent No. 4,444,200 to Fujisaki et al." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation.

43. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation because the sentence is not grammatically correct. But to the extent that Biosig understands the allegations of ¶ 43, denied.

44. It is not clear what meaning Nautilus means by a "heart rate monitor built according to the disclosure of U.S. Patent No. 4,444,200 to Fujisaki et al.," therefore Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied. However, Biosig admits that the Fujisaki et al. reference does not disclose the electrode configuration and circuitry to practice the invention claimed in the '753 Patent and does not disclose at least the following claim limitations: "Whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first

terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier."

45. Biosig admits that in order to practice the claimed invention a product must have an electrode configuration and circuitry such that it satisfies the following claimed limitations: "Whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first

electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." Biosig also admits that in discussing why Fujisaki et al. does not satisfy this claim Biosig explained that the claims recites a "substantially zero electromyogram signal at the output of said differential amplifier" that is achieved by the claimed circuitry and electrode configuration and Fujisaki et al. does not teach this limitation either expressly or inherently and does not describe "a priori, by trial and error" obtaining a "substantially zero electromyogram signal." Biosig otherwise denies the allegations of ¶ 45.

46. Biosig admits that Dr. Lekhtman made the quoted statement in the context of explaining the development of his invention in the "Declaration of Gregory Lekhtman" dated June 12, 2009 and that the Declaration was submitted during the reexamination proceedings. To the extent not admitted, Biosig denies the allegations of ¶ 46.

47. It is not clear what meaning Nautilus means by the "EMG pre-balancing step" as Nautilus did not provide a citation for its quotation. Biosig admits that during the reexamination proceeding, Biosig distinguished Fujisaki et al. on several grounds including that it did not disclose to one of ordinary skill in the art the circuit and electrode configuration claimed in the '753 Patent including, *inter alia,* the claimed circuit that has the following characteristic: "Whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected

between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." In doing so, Biosig stated, *inter alia*, that Fujisaki et al. fails to disclose, *inter alia*, a circuit having these claim limitations to one of ordinary skill in the art (Response to Office Action in Reexamination June 12, 2009, Control No. 90/010,366). Biosig further admits that in discussing Fujisaki et al.'s deficiencies, Biosig explained that Fujisaki et al. failed to provide an explicit disclosure of the claimed circuit and failed to provide an inherent disclosure of such a circuit because Fujisaki et al. does not disclose the claimed circuit limitations and does not disclose the balancing of EMG signals as claimed in the '753 Patent. To the extent not admitted, Biosig denies the allegations of ¶ 47.

48. Biosig admits that during the reexamination proceeding Biosig argued to the Patent Office that in order to practice claim 1 of the '753 Patent it was necessary to have a circuit that balanced the EMG signals "[w]hereby, a first electromyogram signal will be

detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." In doing so, Biosig stated, *inter alia*, that Fujisaki et al. fails to disclose, *inter alia*, a circuit having these claim limitations to one of ordinary skill in the art (Response to Office Action in Reexamination June 12, 2009, Control No. 90/010,366). Biosig further admits that in doing so Biosig pointed out that there was no explicit disclosure of such a circuit by Fujisaki et al. and no inherent disclosure of such a disclosure because Fujisaki et al. does not disclose balancing the detected EMG signals a priori. To the extent not admitted, Biosig denies the allegations of ¶ 48.

49. Admitted.

50. Biosig admits that during the reexamination proceeding it relied on an argument that Fujisaki et al. did not disclose the following claim limitations from the claims of the '753 Patent "[w]hereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." Biosig further admits that during the reexamination it explained that Fujisaki et al. does not expressly teach these claimed limitations and does not inherently teach them either for several reasons including that Fujisaki et al. does not describe a balancing of EMG signals. It is not clear what meaning Nautilus means by the "EMG pre-balancing step" as Nautilus did not provide a citation for its quotation." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation.

51. It is not clear what meaning Nautilus means by a "heart rate monitor [that] is built as taught in U.S. Patent No. 4,444,200 to Fujisaki et al." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. Biosig further notes that Fujisaki et al. does not teach several claim limitations and therefore Nautilus allegation is denied.

52. Admitted.

53. Admitted.

54. Admitted, but further admitted that Dr. Lekhtman made additional statements during the reexamination about the electrode configuration, circuitry, and monitor of Fujisaki et al. that distinguished Fujisaki et al. Biosig also admits that it made statements during the reexamination about electrode configurations and circuitry other than that disclosed in Fujisaki et al. that have a width between the electrodes that is narrower than the width of the electrodes and that some of such other configurations were within the scope of the claims.

55. Denied, as Nautilus' statement is contrary to the reexamination proceedings and statements made during the reexamination proceedings. However, admitted that Fujisaki et al. does not disclose, *inter alia*, an electrode configuration and circuitry as claimed in the '753 patent.

56. Denied, Biosig explained during the reexamination that a contact heart rate monitor can display a user's heart rate without practicing any claim of the '753 patent if that device does not satisfy the claim limitations including the claim limitation that "[w]hereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode

and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." To the extent not admitted, Biosig denies this allegation because the '753 Patent claims do not require that EMG signals of "equal amplitude and phase for the left and right hands" be detected.

57. It is not clear what "devices" or "signals" Nautilus is referring to." Therefore, Biosig denies the allegation as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation.

58. Denied.

59. Biosig objects to this allegation as inappropriately demanding the disclosure of attorney work product and attorney-client privileged information.

60. Biosig objects to this allegation as inappropriately demanding the disclosure of attorney work product and attorney-client privileged information.

61. Biosig objects to this allegation as inappropriately demanding the disclosure of attorney work product and attorney-client privileged information.

62. Denied.

63. Denied.

64. Biosig objects to this allegation as inappropriately demanding the disclosure of attorney work product and attorney-client privileged information.

65. It is not clear what meaning Nautilus attributes to the "'downstream solution' that Plaintiff distinguished in the '753 patent reexamination proceeding," as Nautilus did not provide a citation for its quotation. Therefore, Biosig denies the allegations of the first sentence of ¶ 65 as Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. Biosig admits that competitors to Biosig "can sell 4-electrode contact heart rate monitor devices in the United States that display a user's heart rate without practicing any claim of the '753 patent." Biosig denies the remainder of the averments of ¶ 65.

Biosig's Answer to Nautilus' Second Counterclaim: Patent Invalidity

1. Biosig repeats and reallages all of the preceding paragraphs in response to Nautilus' First Counterclaim as if fully set forth here.

2. Biosig admits that despite (i) Nautilus asking the U.S. Patent & Trademark Office to institute two reexaminations of Biosig's 753 Patent, (ii) those requests being granted, and (iii) the U.S. Patent & Trademark Office agreeing with Biosig that the '753 patent claims are patentable, that Nautilus is still contesting the validity of the '753 Patent and an actual controversy exists between Biosig and Nautilus regarding the validity of the asserted claims of the '753 Patent. In its complaint Biosig asserted claims 1 and 11 of the '753 Patent against Nautilus, and therefore Biosig admits that there is an actual controversy regarding the

validity of those claims. As Biosig did not assert claims 2-10 and 12-16, Biosig denies that there is an actual controversy regarding the validity of those claims, and denies that the Court has subject matter jurisdiction over the nonasserted claims.

3. Denied.

4. Biosig admits that some "differential amplifiers" can operate as alleged by Nautilus but denies that this is the only and exclusive definition of a "differential amplifier." Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation because Nautilus did not provide the context for its definition, therefore denied.

5. Biosig admits that some "difference amplifiers" can operate as alleged by Nautilus but denies that this is the only and exclusive definition of a "differential amplifier." Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation because Nautilus did not provide the context for its definition, therefore denied.

6. It is not clear on what instance or context Nautilus is referring to regarding the alleged use of the terms "difference amplifier" and "differential amplifier," therefore Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied. Based on more specific information regarding Nautilus' statement, Biosig can confirm the veracity of Nautilus' allegation. Biosig admits that in the September 15, 1993 response to an office action, Biosig did use the terms "differential amplifier" and "difference amplifier" to refer to the same structure.

7. Denied, it is not clear "what prior art" Nautilus is referring to; therefore, Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. Biosig admits, however, that the '753 Patent Applicant distinguished certain prior art applied by the patent examiner as stated in the 753 Patent file history. For instance, Biosig

distinguished U.S. Patent No. 4,319,581 ("Cutter") on the basis that the heart rate monitor taught in Cutter is "not in any way adapted to eliminate either noise or the effects of muscle artifact." Biosig also admits that the '753 Patent Applicant argued and distinguished over Cutter on numerous independent basis including that Cutter did not teach, *inter alia,* (i) the electrode configuration claimed including a four-electrode arrangement as claimed; (ii) electrical connections and circuitry as claimed; (iii) a difference amplifier as claimed; (iv) circuitry to eliminate noise and the effects of muscle artifact; and (v) removing EMG signals as claimed. The specific statements made by Biosig are set forth in the file history.

8. It is not clear what "rejection" Nautilus is referring to, therefore Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied. Biosig admits, however, that the '753 Patent Applicant distinguished certain prior art applied by the patent examiner as stated in the 753 Patent file history. For instance, Biosig explained that the heart rate monitor taught in U.S. Patent No. 4,319,581 ("Cutter") is "not in any way adapted to eliminate either noise or the effects of muscle artifact." Biosig also admits that the '753 Patent Applicant argued and distinguished over Cutter on numerous independent basis including that Cutter did not teach, *inter alia,* (i) the electrode configuration claimed including a four-electrode arrangement as claimed; (ii) electrical connections and circuitry as claimed; (iii) a difference amplifier as claimed; (iv) circuitry to eliminate noise and the effects of muscle artifact; and (v) removing EMG signals as claimed. Biosig also distinguished U.S. Patent No. 4,913,146 ("DeCote Jr.") as not curing the deficiencies of Cutter and failing to teach the electrode configuration, circuitry, differential amplifier, and operation of those devices as claimed. The specific statements made by Biosig are set forth in the file history.

9. Denied, the '753 Patent Applicant's arguments are those stated in the 753 Patent file history. Biosig admits, however, that the '753 Patent Applicant argued and distinguished over Cutter on numerous independent basis including that Cutter did not teach, *inter alia,* (i) the electrode configuration claimed including a four-electrode arrangement as claimed; (ii) electrical connections and circuitry as claimed; (iii) a difference amplifier as claimed; (iv) circuitry to eliminate noise and the effects of muscle artifact; and (v) removing EMG signals as claimed. Biosig admits that it also distinguished over Cutter on the grounds as stated in the file history.

10. It is not clear what "prior art" Nautilus is referring to in ¶ 10. Therefore Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, and Biosig denies the allegations. Biosig admits that the U.S. Patent & Trademark Office was correct in finding that Fujisaki et al. does not teach the claimed inventions of the '753 Patent.

Biosig's Answer to "Prior Art – The Fujisaki, Charnitski, and Righter Patents"

Biosig admits that the '753 Patent is valid and that Nautilus submitted Fujisaki et al. and Charnitski et al. to the U.S. Patent and Trademark Office, but withheld the "Righter Patent" apparently believing that the Righter Patent was not relevant to the validity of the '753 Patent claims. Biosig admits that the U.S. Patent & Trademark Office agreed with Biosig that the '753 Patent is valid over the Fujisaki et al. and Charnitski et al. Patents.

11. Admitted.

12. Admitted.

13. Admitted.

14. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied

15. Biosig admits that the U.S. Patent & Trademark Office was correct in finding that Fujisaki et al. does not teach the claimed inventions of the '753 Patent. Biosig admits only that Fujisaki et al. teaches a heart rate monitor having four electrodes and a differential amplifier but that Fujisaki et al. does not teach the electrode configuration and circuitry claimed and does not teach the claim limitations: "Whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." To the extent not expressly admitted, denied.

16. Denied.

17. Biosig admits that the U.S. Patent & Trademark Office was correct in finding that the claimed inventions of the '753 Patent were patentable over U.S. Patent No. 4,248,244 ("Charnitski"). Biosig admits that Figure 8 of Charnitski discloses a method that includes "electronically reject[ing] each time which deviates more than a given percent from a previous time," "electronically reject[ing] each time measured thereafter which deviates more than said given percent from the last accepted value of time," and "electronically averaging the sum of said first predetermined number and second predetermined number of accepting and stored times." To the extent not admitted, denied.

18. Biosig admits that U.S. Patent No. 4,938,228 discloses that in "other embodiments, such as an exercise bike handle bar-mounted sensor, a ground element is preferably used in connection with both sensors 104A and 104B." To the extent not admitted, Biosig denies the allegations of ¶ 18.

19. Biosig admits only that Fujisaki et al. teaches a "differential amplifier 31" having two inputs. Biosig admits that Fujisaki et al. does not teach the electrode configuration and circuitry claimed and does not teach the claim limitations: "Whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and

said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." To the extent not admitted, Biosig denies the allegations of ¶ 19.

20. Admitted.

21. Denied, Fujisaki et al. does not disclose "a four-electrode configuration with spacers in between." Biosig admits that Fujisaki et al. discloses a four-electrode configuration that is distinguishable than the electrode configuration claimed in the '753 Patent. Biosig admits that Fujisaki et al. at column 3, lines 3-10 discloses an "electrical circuit 30" that "includes a differential amplifier 31 which has its one input coupled to the outer cylindrical electrode 22 of the left-hand grip sensor 20, the other input thereof being connected to the right-hand grip sensor 20." Biosig admits that Fujisaki et al. discloses that the large cylindrical electrodes 21 of the left- and right-hand grip sensors are "coupled to the ground terminal of the differential amplifier 31." Biosig further admits that Fujisaki et al. does not teach the electrode configuration and circuitry claimed and does not teach the claim limitations: "Whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and

the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." To the extent not admitted, Biosig denies the allegations of ¶ 18.

22. Biosig admits that Nautilus accurately quoted column 10, lines 10-13 of Fujisaki et al. To the extent not admitted, denied.

23. Biosig admits that Fujisaki et al. discloses four large cylindrical electrodes and that Fujisaki et al. does not teach the electrode configuration and circuitry claimed and does not teach the claim limitations: "Whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode; so that, when said first electromyogram signal is applied to said first terminal and said second electromyogram signal is applied to said second terminal, the first and the second electromyogram signals will be subtracted from each other to produce a substantially zero electromyogram signal at the output of said differential amplifier; and whereby a first electrocardiograph signal will be detected between said first live electrode and

said first common electrode and a second electrocardiograph signal, of substantially equal magnitude but of opposite phase to said first electrocardiograph signal will be detected between said second live electrode and said second common electrode; so that when said first electrocardiograph signal is applied to said first terminal and said second electrocardiograph signal is applied to said second terminal, the first and second electrocardiograph signals will be added to each other to produce a non-zero electrocardiograph signal at the output of said differential amplifier." To the extent not admitted, Biosig denies the allegations of ¶ 23.

24. Biosig admits that Fujisaki et al. discloses four large cylindrical electrodes, but denies that Fujisaki et al. teaches the electrode configuration and circuitry claimed in the '753 Patent.

25. Admitted.

26. Admitted.

27. Denied, as it is not clear what meaning Nautilus attributes to the term "pulse generator," and therefore Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation. Biosig admits that Nautilus accurately quoted column 3, lines 17-19 of the '753 Patent.

28. Biosig admits that Fujisaki et al. discloses a filter 32 coupled to the output of the differential amplifier 31 and a pulse generator 34 that is coupled to the microprocessor 40. As it Nautilus did not define the term "threshold limiter," it is not clear what meaning Nautilus attributes to that term. Therefore, Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation and to the extent not admitted, denied.

Biosig notes that Nautilus did not have paragraphs numbered 29-54 in its Second Counterclaim.

55. Biosig admits that Fujisaki et al. discloses a liquid crystal display 43 that displays the calculated heart pulse rate, a digital computer 40 that that is connected to a driver 42, and that the calculated heart pulse rate is displayed on the liquid crystal display 43 through the driver 42. To the extent not admitted, denied.

56. It is not clear what Nautilus means by "an algorithm similar to the heart rate calculation algorithm of the '753 Patent" in ¶ 56, as Nautilus has not defined what it considers the algorithm disclosed by Charnitski et al. to be for purposes of this allegation. Therefore, Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, and Biosig denies the allegations of ¶ 56.

57. Biosig admits that Nautilus accurately copied Figure 8 of Charnitski et al.

58. Biosig admits that Nautilus sometimes after ¶ 58 refers to the method of Figure 8 of Charnitski et al. as "the Charnitski' 244 patent algorithm."

59. Nautilus' allegation calls for discovery, and therefore Biosig currently lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation and accordingly denies the allegations of ¶ 59.

60. Nautilus' allegation calls for discovery, and therefore Biosig currently lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation and accordingly denies the allegations of ¶ 60 with the following exception. Biosig admits that Figure 8 of Charnitski discloses "electronically rejecting each time which deviates more than a given percent from a previous time," and "electronically rejecting each time

measured thereafter which deviates more than said given percent from the last accepted value of time."

61. Denied.

62. Denied.

63. Denied.

64. Denied.

65. Denied.

Biosig's Answer to "Prior Art – The "E" Factor and Biosig's Own Commercial Activities

66. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied. But Biosig admits it has been aware of the book entitled The "E" Factor, by Dr. Bob Goldman and Dr. Ronald Klatz in the 1990's, but it is not presently sure of the exact date when it first became aware of that book.

67. Admitted.

68. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied.

69. Biosig admits that the inventor of the '753 Patent, Dr. Gregory Lekhtman, contributed the chapter entitled "High-Tech Pulse Monitoring" in The E-Factor book. Biosig admits that The E-Factor book itself was not cited to the U.S. Patent & Trademark Office while Biosig prosecuted the original application that led to the issuance of the '753 Patent. Biosig further admits that the U.S. Patent Office found the claims to be patentable over The E-Factor book during the reexamination proceedings and denies the materiality of The E-Factor book.

70. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied.

71. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied. But Biosig admits it has been aware of the book entitled The "E" Factor, by Dr. Bob Goldman and Dr. Ronald Klatz in the 1990's, but it is not presently sure of the exact date when it first became aware of that book.

72. Admitted.

73. Admitted.

74. Denied. Biosig admits that The E-Factor book does feature some aspects of Biosig's Insta-Pulse technology and that the book does not describe the inventive technology claimed and described in the '753 Patent.

75. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation, therefore denied.

76. Biosig admits that page 244 of the E-Factor book shows an "ECG" heart rate monitor product developed by Biosig. Because the picture in the answer is not clear, Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation that it has provided a true copy of the photo on page 244 of The E-Factor book, therefore denied.

77. Based on current information, Biosig denies Nautilus' allegations in ¶ 77.

78. Admitted.

79. Because the picture in the answer is not clear, Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation regarding whether the photo on page 244 of The E-Factor book includes a display, therefore denied.

80. Biosig admits that The E-Factor book shows an "Insta-Pulse" product designed by Biosig and that a version of the Insta-Pulse 107 product was sold in the United States prior to June 9, 1991. To the extent not admitted, denied.

81. Based on current information, denied.

82. Admitted.

83. Denied.

84. Denied.

85. Admitted.

86. Admitted, but Biosig admits that the electrodes are not of the same configuration with the same circuitry as claimed in the '753 Patent.

87. Based on current information, denied.

88. Admitted.

89. Denied.

Plaintiff Biosig's Answer to Nautilus' Third Counterclaim: Inequitable Conduct

1. Biosig repeats and reallages all of the preceding paragraphs in response to Nautilus' First and Second Counterclaims as if fully set forth here.

2. Biosig admits that Dr. Gregory Lekhtman is the inventor of the '753 Patent and is an officer of Biosig.

3. Biosig admits that Dr. Gregory Lekhtman was an officer of Biosig during the prosecution of the application that led to the '753 patent-in-suit.

4. Biosig admits that Dr. Gregory Lekhtman had a financial stake in Biosig during the prosecution of the application that led to the '753 Patent.

5. Biosig denies that Dr. Gregory Lekhtman stood to benefit financially merely from the issuance of the '753 Patent. Biosig admits that if Biosig brought a product to market having the features claimed in the '753 patent and customers were willing to buy the product, if other companies were willing to license the technology claimed in the '753 Patent, or if others used the '753 patented technology without authorization, thereby infringing upon the '753 Patent, and Dr. Gregory Lekhtman had the resources to seek remedies in Court for that infringement that Dr. Gregory Lekhtman would ultimately benefit financially from the issuance of the '753 Patent.

6. Admitted.

7. Biosig admits only that patent applications owed a duty of candor to the U.S. Patent and Trademark Office as required by law and that such duty was required at all times during the prosecution of the '753 patent asserted in this case, but Biosig denies Nautilus' characterization of the legal standard for the duty of the candor.

8. Denied.

9. Denied.

10. Denied.

11. Denied.

12. Denied, but Biosig admits that The "E" Factor book itself was not considered during the prosecution of the application that led to the issuance of the '753 Patent. Biosig denies materiality and notes that the U.S. Patent & Trademark Office considered the

portions of The "E" Factor book cited in the reexamination and confirmed the patentability of all claims.

13. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations as it is does not presently have the original application files. However, Biosig is trying to obtain those files. Therefore, as it is without sufficient information to admit or deny the allegation, Biosig denies the allegation. Biosig admits, however, that the informal as-filed drawing of Figure 5 of application serial no. 895,936 was later replaced with a formal drawing for Figure 5.

14. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations because Biosig does not know where Nautilus obtained the excerpts that it copied into its Answer and Counterclaim, the copies are not clear, and they have been admittedly altered by Nautilus.

15. Biosig denies that Dr. Lekhtman misrepresented the subject matter of Figure 5 of the '753 Patent to the U.S. Patent Office. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation that the picture of the Biosig product at page 244 of The "E" Factor book is identical to original Figure 5 of the application that led to the '753 Patent and is trying to obtain the information to either confirm or deny Nautilus' allegation. Therefore, for now, Biosig denies the allegation regarding the source of the original Figure 5 of the application that led to the issuance of the '753 Patent.

16. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation that the picture of the Biosig product at page 244 of the E Factor book is identical to original Figure 5 of the application that led to the '753 Patent and is

trying to obtain the information to either confirm or deny Nautilus' allegation. Therefore, Biosig denies the "material difference" allegation.

17. Denied.

18. Denied.

19. Denied. Biosig admits only that the photograph shown does disclose some, but certainly not all, of the features of the '753 Patent claims and that those disclosures are cumulative to the disclosed art.

20. Denied.

21. Based on currently available information, Biosig denies the allegations of ¶ 21.

22. Based on currently available information, Biosig denies the allegations of ¶ 22.

23. Biosig admits that The E-Factor book does not describe whether the picture of the product referenced by Nautilus included a differential amplifier. Presently, Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation that the Insta-Pulse 105 product pictured in The "E" Factor book included a differential amplifier and is researching the issue, so for now denied.

24. Presently, Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations and is researching the issue, so Biosig denies the allegations.

25. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations because it does not know what Nautilus means by "additional 4-ring Insta-Pulse products" and particularly what these products would be in "addition" to.

Therefore, Biosig denies Nautilus' allegations in ¶ 25. But Biosig admits that it did disclose, sell, and offer for sale certain Insta-Pulse products, but not others, in the United States prior to June 9, 1992.

26. Biosig admits only that it sold certain Insta-Pulse devices in the United States prior to June 9, 1992, and admits that it did not sell other Insta-Pulse devices in the United States prior to June 9, 1992.

27. Biosig admits that it sold products bearing the tradename Insta-Pulse 103 in the United States prior to June 9, 1992. Biosig denies that it sold products under the tradename Insta-Pulse 203 in the United States prior to June 9, 1992. Biosig admits that the products bearing the tradenames Insta-Pulse 103, 105, 107, 201 and 203 have changed over time and have been upgraded, so for example an Insta-Pulse 105 product sold at one point in time is not the same as an Insta-Pulse 105 product sold at another point in time. Biosig admits that certain products bearing the tradename Insta-Pulse 105, 107, and 201 were sold in the United States prior to June 9, 1992, and that other different products bearing the tradename Insta-Pulse 105, 107, and 201 were sold in the United States after June 9, 1992. Biosig further admits that no Insta-Pulse product containing all of the features of the claims of the '753 Patent was sold in the United States prior to June 9, 1992.

28. Denied.

29. Denied.

30. Admitted.

31. Biosig admits that the device tested by Dr. Galiana had spacing between electrodes that is narrower than the width of each electrode, that the electrode configuration tested by Dr. Galiana is different than that shown in Fujisaki et al., and was disclosed during

the reexamination. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegation that the picture of ¶31 is a true and accurate excerpt of the work done by Galiana, but if Nautilus provides additional information concerning the picture, Biosig would be happy to confirm the contents of the picture.

32. Denied, the device tested by Dr. Galiana has a different electrode configuration than the electrode configuration of Fujisaki et al. discussed during the reexamination proceedings and there was no contradiction between what Biosig told this Court and the U.S. Patent and Trademark Office. Rather, Nautilus has continually contradicted itself through this case by for example alleging that Dr. Lekhtman's invention didn't work, but then alleging that it did work but the claims were invalid because the concept was already invented.

33. Denied.

34. Denied.

35. Denied.

Biosig's Answer to Nautilus' Fourth Counterclaim: Assertion of a Patent Knowingly Obtained by Fraud

1. Biosig repeats and reallages all of the preceding paragraphs in response to Nautilus' First through Third Counterclaims as if fully set forth here.

2. Denied.

3. Denied.

4. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations because it does not know what market Nautilus is alleging that there are no suitable commercially noninfringing substitutes in. Therefore, Biosig denies the allegations.

5. Denied.

6. Denied.

7. Denied.

Biosig's Answer to Nautilus' Fifth Counterclaim: Patent Misuse

1. Biosig repeats and reallages all of the preceding paragraphs in response to Nautilus' First through Fourth Counterclaims as if fully set forth here.

2. Denied.

3. Denied.

4. Denied.

5. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations because it does not know what Nautilus means by a "heart rate monitor built according to the Fujisaki '200 patent," therefore Biosig denies Nautilus' allegations in ¶ 5.

6. Biosig admits that the '753 patent claims are patentable over the Fujisaki '200 patent, but Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations because it does not know what Nautilus means by a "heart rate monitor built as disclosed in the Fujisaki '200 patent," therefore Biosig denies Nautilus' allegations in ¶ 6.

7. Denied.

8. Denied.

Biosig's Answer to Nautilus' Sixth Counterclaim: False Marking

1. Biosig repeats and reallages all of the preceding paragraphs in response to Nautilus' First through Fifth Counterclaims as if fully set forth here.

2. Admitted.

3. Admitted.

4. Biosig admits that it has used the "Fitness Trainer" article as an advertisement for certain "Insta-Pulse" products, but denies that it has used the "Fitness Trainer" article as an advertisement for other "Insta-Pulse" products.

5. Biosig admits that it has published the "Fitness Trainer" article on its website but denies that it has published the "Fitness Trainer" article in paper format distributed in the United States.

6. Denied.

7. Denied.

8. Denied.

9. Biosig admits that the claims of the '753 Patent include patented algorithms and that those claims cover, *inter alia*, the algorithms set forth in Figure 4-1 to 4-7 of the '753 Patent, and therefore the algorithms set forth in Figures 4-1 to 4-7 are patented algorithms.

10. Denied.

Biosig's Answer to Nautilus' Seventh Counterclaim: False Marking

1. Biosig repeats and reallages all of the preceding paragraphs in response to Nautilus' First through Sixth Counterclaims as if fully set forth here.

2. Biosig admits that it has described and continued to describe certain "InstaPulse" heart rate monitor models as "patented," and admits that it has not described other "InstaPulse" heart rate monitor models as "patented."

3. Biosig admits that it described some InstaPulse 107 models as patented, and some InstaPulse 107 models as not being patented.

4. Admitted.

5. Denied, as the alleged quote is incorrect. Biosig further denies Nautilus' allegations of ¶5 because Biosig's Gregory Lekhtman stated in a sworn declaration to the Patent Office that Fujisaki et al did not disclose the invention configuration and circuitry claimed, and also stated in the sworn declaration that some electrode configurations in which the space between the electrodes is narrower than the width of each electrode (but not those of Fujisaki et al.) were inside the scope of the '753 patent claims because those configurations satisfied the claim limitations, while Fujisaki et al did not.

6. Denied, Biosig's Gregory Lekhtman stated that in certain embodiments in the '753 patent the space between electrodes is wider than the width of each electrode and also stated in the same document that some electrode configurations, but not those of Fujisaki et al., in which the space between the electrodes is narrower than the width of each electrode were inside the scope of the '753 patent claims.

7. Denied.

8. Denied.

9. Denied.

10. Denied.

11. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations because it does not know Nautilus defines as the "heart rate calculation algorithm set forth in the '753 patent," therefore denied.

12. Biosig lacks knowledge or information sufficient to form a belief about the truth of Nautilus' allegations because it does not know Nautilus defines as the "heart rate calculation algorithm set forth in the '753 patent," therefore denied.

13. Denied.

14. Biosig admits that it has marked certain InstaPulse products with the '753 patent number and described certain InstaPulse products as patented in order to notify the public that those products fall within the scope of at least one claim of the '753 patent. To the extent not admitted, denied.

Biosig's Affirmative Defenses to Nautilus' Count IV:

Assertion of a Patent Knowingly Obtained by Fraud

First Affirmative Defense

1. Biosig's bringing of this action is protected conduct, and Biosig is immune from Federal Antitrust liability by the *Noerr-Pennington* doctrine and the Constitution of the United States. Biosig's suit is not objectively baseless. A reasonable litigant could realistically expect success on the merits for Biosig's claims. The U.S. Patent and Trademark has concluded three examinations of the '753 Patent and reached the conclusion that the '753 Patent claims are patentable on all three instances. The '753 Patent claims are presumed valid under 35 U.S.C. § 282. Many of Nautilus' defenses from the first litigation between the parties on this subject matter were determined in favor of Biosig and against Nautilus during the two reexamination proceedings that Nautilus instituted. Further, Nautilus has infringed and continues to infringe the '753 Patent. Biosig's conduct is also protected because this action does not demonstrate any evidence of a subjective intent by Biosig to use the governmental process to interfere with a competitor's business. Nautilus is not a competitor of Biosig. Further, Biosig has not shown that it has any intent to interfere with Nautilus' business. In fact, Biosig has not even requested a permanent injunction in this matter. Nautilus has not identified any Biosig competitor that Biosig is allegedly interfering with or attempting to interfere with.

Second Affirmative Defense

2. Nautilus' claims are barred by the statute of limitations and laches including the statute of limitations that applies to Federal Antitrust claims.

Third Affirmative Defense

3. Nautilus' antitrust claims fail to state a claim for relief because, *inter alia*, they do not allege that Biosig has monopoly power in a relevant antitrust market.

Fourth Affirmative Defense

4. To the extent that Nautilus is asserting an attempted monopolization claim, Nautilus' antitrust claims fail to state a claim for relief because, *inter alia*, they do not allege a dangerous probability that Biosig will achieve monopoly power.

Fifth Affirmative Defense

5. Nautilus' antitrust claims fail to state a claim for relief as they do not allege a proper antitrust injury.

Sixth Affirmative Defense

6. Nautilus has failed to mitigate any damages that it allegedly suffered.

Seventh Affirmative Defense

7. Nautilus' claims are barred by the doctrine of unclean hands.

Biosig's Affirmative Defenses to Nautilus' Count V: Patent Misuse

First Affirmative Defense

1. Nautilus' patent misuse counterclaims are barred by the statute of limitations.

Second Affirmative Defense

2. To the extent that Nautilus seeks monetary damages for alleged patent misuse, Nautilus has failed to state a claim for relief because patent misuse is an affirmative defense to a patent infringement action that only provides for limited relief and can be styled as a declaratory judgment counterclaim, but a party is not entitled to monetary damages for a claim of patent misuse.

Third Affirmative Defense

3. Nautilus' patent misuse counterclaim fails to state a claim for relief.

Biosig's Affirmative Defenses to Nautilus' Count VI: False Marking

First Affirmative Defense

1. Nautilus' false marking counterclaims are barred by the statute of limitations.

Second Affirmative Defense

2. Biosig has not made any statements that constitute a violation of 35 U.S.C. § 292, the False Patent Marking Statute. The statement quoted by Nautilus from the "Fitness Trainer" that "Biosig also developed a new patented algorithm to process instant heart rate accurately using these hand sensors" is not a violation of 35 U.S.C. § 292, the False Patent Marking Statute.

Third Affirmative Defense

3. Biosig did not intend to deceive the public.

Fourth Affirmative Defense

4. Nautilus' claims are barred by the doctrine of unclean hands.

Fifth Affirmative Defense

5. Damages should not be awarded to Nautilus for any alleged false marking by Biosig.

Biosig's Affirmative Defenses to Nautilus' Count VII: False Marking

First Affirmative Defense

1. Nautilus' patent false marking counterclaims are barred by the statute of limitations.

Second Affirmative Defense

2. Biosig has not made any false or other statements that constitute a violation of 35 U.S.C. § 292, the False Patent Marking Statute.

Third Affirmative Defense

3. Biosig did not intend to deceive the public.

Fourth Affirmative Defense

4. Nautilus' claims are barred by the doctrine of unclean hands.

Fifth Affirmative Defense

5. Damages should not be awarded to Nautilus for any alleged false marking by Biosig.

Biosig's Answer to Nautilus' Prayer for Relief

WHEREFORE, Biosig prays that Nautilus' prayer for relief be completely denied. Biosig admits that Nautilus has demanded a jury trial on all issues triable by a jury.

Dated: January 24, 2011

By:_____

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CERTIFICATE OF SERVICE

I hereby certify that on January 24, 2011, filed the foregoing document via ECF which automatically delivered the document to the attorneys of record.

/s/ Scott M. Zimmerman